



1626

PATENT
Attorney Docket No. 213673
DHHS Reference No. E-031-1998/0-US-04

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Beaucage et al.

Group Art Unit: 1626

Application No. 09/937,292

Examiner: T. Solola

Filed: January 25, 2004

For: N-ACYLPHOSPHORAMIDITES AND
THEIR USE IN OLIGONUCLEOTIDE
SYNTHESIS

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Pursuant to 37 CFR 1.97 and 1.98, the references listed on the enclosed Form PTO-1449 and/or Substitute Form PTO-1449 ("Form 1449") are submitted for consideration by the Examiner in the examination of the above-identified patent application.

The full consideration of the references in their entirety by the Examiner is respectfully requested and encouraged. Also, it is respectfully requested that the references be entered into the record of the present application and that the Examiner place his or her initials in the appropriate area on the enclosed Form 1449, thereby indicating the Examiner's consideration of each of the references.

The submission of the references listed on the Form 1449 is for the purpose of providing a complete record and is not a concession that the references listed thereon are prior art to the invention claimed in the patent application. The right is expressly reserved to establish an invention date earlier than the above-identified filing date in order to remove any reference submitted herewith as prior art should it be deemed appropriate to do so.

Further, the submission of the references is not to be taken as a concession that any reference represents art that is relevant or analogous to the claimed invention. Accordingly, the right to argue that any reference is not properly within the scope of prior art relevant to an examination of the claims in the above-identified application is also expressly reserved.

The Information Disclosure Statement is being filed:

- within** any one of the following time periods: (a) within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d); (b) within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 of an international application; (c) before the mailing date

of a first Office Action on the merits; or (d) before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

- after** (a), (b), (c) or (d) above, but before the mailing date of a final action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an action that otherwise closes prosecution in the application, and includes *one* of:
- the Statement under 37 CFR 1.97(e) (see "Statement under 37 CFR 1.97(e)" below).
or
 the fee of \$180 set forth in 37 CFR 1.17(p) (see "Fees" below).
- after** the mailing date of a final action under 37 CFR 1.113 or a Notice of Allowance under 37 CFR 1.311, or an action that otherwise closes prosecution in the application, and on or before payment of the issue fee, and includes the Statement under 37 CFR 1.97(e) (see "Statement under 37 CFR 1.97(e)" below), and the fee of \$180 as set forth in 37 CFR 1.17(p) (see "Fees" below).
- after** the mailing date of a Notice of Allowance under 37 CFR 1.311, and on or before payment of the issue fee, and **within** thirty days of receiving each item of information contained in the Information Disclosure Statement, and includes the Statement under 37 CFR 1.704(d) (see "Statement under 37 CFR 1.704(d)" below), and the fee of \$180 as set forth in 37 CFR 1.17(p) (see "Fees" below).
- NOTE: This is for original applications except applications for a design patent, filed on or after May 29, 2000, wherein a paper containing only an Information Disclosure Statement in compliance with 37 CFR 1.97 and 1.98 is being filed.

Copies of the References

- Copies of all of the references listed on the enclosed Form 1449 are enclosed herewith.
- This patent application was filed after June 30, 2003. Accordingly, copies of U.S. patents and patent applications that are listed on the accompanying Form 1449 are not enclosed herewith (see Official Gazette Notice of August 5, 2003). Copies of other references identified on the accompanying Form 1449 are enclosed herewith.
- Attached to each reference not in the English language is a concise explanation of the relevance pursuant to 37 CFR 1.98(a)(3). An English-language equivalent/patent, or an English-language abstract, or an English-language version of the search report or action by a foreign patent office in a counterpart foreign application indicating the degree of relevance found by the foreign office is being submitted in lieu of a concise explanation of the relevance pursuant to 37 CFR 1.98(a)(3).
- A copy of the foreign search report is enclosed herewith.
- The references listed on the enclosed Form 1449 were previously identified in the parent application(s) of the present application, and copies of the references were

furnished at that time. Accordingly, additional copies of the references are not submitted herewith, so as not to burden the file with duplicate copies of references. The Examiner is respectfully requested to carefully review the references in accordance with the requirements set out in the Manual of Patent Examining Procedure. In accordance with 37 CFR 1.98(d), the details of the parent application(s) relied upon for an earlier filing date under 35 USC 120 in which copies of the references were previously furnished are set out below:

U.S. APPLICATIONS		Status (<i>check one</i>)		
U.S. APPLICATIONS	U.S. FILING DATE	PATENTED	PENDING	ABANDONED
1.				
2.				
3.				

Statement under 37 CFR 1.97(e)

- The **undersigned** hereby states that each item of information contained in the Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign patent application not more than three months prior to the filing of the Information Disclosure Statement.
- The **undersigned** hereby states that no item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign patent application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the Information Disclosure Statement.

Statement under 37 CFR 1.704(d)

- The **undersigned** hereby states that each item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and that this communication was not received by any individual designated in 37 CFR 1.56(c) more than thirty days prior to the filing of the Information Disclosure Statement.

Fees

- No fee** is owed by the applicant(s).
- The **IDS Fee of \$180** under 37 CFR 1.17(p) is enclosed herewith.

Method of Payment of Fees

- Attached is a check in the amount of \$.
 Charge Deposit Account No. 12-1216 in the amount of \$180.00. (A duplicate copy of this communication is enclosed for that purpose.)

Authorization to Charge Additional Fees

- If any additional fees are owed in connection with this communication, please charge Deposit Account No. 12-1216. (A duplicate copy of this communication is enclosed for that purpose.)

Instructions as to Overpayment

- Credit Account No. 12-1216.
 Refund


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Date: October 8, 2004

CERTIFICATE OF MAILING

I hereby certify that this INFORMATION DISCLOSURE STATEMENT (along with any documents referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: October 8, 2004


(Kenneth P. Spina)

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OCT 12 2004

Substitute for form 1449A/B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

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Of

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Complete if Known

Application Number	09/937,292
Filing Date	January 25, 2002
First Named Inventor	Beaucage
Group Art Unit	1626
Examiner Name	T. Solola
Attorney Docket Number	213673

U.S. PATENT DOCUMENTS

Examiner Initials	Doc. No.	U.S. Patent Document		Name of Patentee or Applicant	Date of Publication	Filing Date If Appropriate
		Application or Patent Number	Kind Code			
D E	4,950,745			Ishido et al.	Aug. 21, 1990	
D F	5,519,126			Hecht	May 21, 1996	
D G	5,639,867			Brill	June 17, 1997	
D H	5,652,358			Pfleiderer et al.	July 29, 1997	
D I	5,670,489			Baxter et al.	Sep. 23, 1997	
D J	5,703,218			Urdea et al.	Dec. 30, 1997	
D K	5,763,599			Pfleiderer et al.	June 9, 1998	
D L	5,866,700			Pfleiderer et al.	Feb. 2, 1999	
D M	5,889,165			Fodor et al.	Mar 30, 1999	
D N	5,908,926			Pirrung et al.	June 1, 1999	
D O	6,001,982			Ravikumar et al.	Dec. 14, 1999	
D P	6,022,963			McGall et al.	Feb. 8, 2000	
D Q	6,043,060			Imanishi	Mar. 28, 2000	
D R	US2001/0044529			Beaucage et al.	Nov. 22, 2001	

OTHER - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Doc. No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number (s), publisher, city and/or country where published.	Translation	
			Yes	No ⁺
D S		Barone et al., <i>Nuc. Acids. Res.</i> , 12 (10) 4051-4061 (1984)		
D T		Beaucage et al., <i>Annals of the N.Y. Acad. of Sciences</i> , 616, 483-485 (1990)		
D U		Beaucage et al., <i>Tetrahedron</i> , 48 (12) 2223-2311 (1992)		
D V		Beaucage, <i>Methods in Mol. Biol.</i> , 20: Protocols for Oligonucleotides and Analogs, Synthesis and Properties, 33-61, edited by Sudhir Agrawal, Totowa, N.J., Humana Press (1993)		
D W		Beaucage et al., <i>Current Protocols in Nucleic Acid Chemistry</i> Vol. 1, 3.3.1-3.3.19, John Wiley & Sons, (2000)		
D X		Bigg et al., <i>Synthesis: J. Synthetic Org. Chem.</i> , 277-278 (1992)		
D Y		Boal et al., <i>Nuc. Acids. Res.</i> , 24 (15), 3115-3117 (1996)		
D Z		Finger et al., <i>J. Am. Chem. Soc.</i> , 2674-2675 (1959)		
E A		Gray et al., <i>J. Am. Chem. Soc.</i> , 81, 4351-4355 (1959)		
E B		Iyer et al., <i>J. Org. Chem.</i> , 55, 4693-4699 (1990)		
E C		Iyer, <i>Current Protocols in Nucleic Acid Chemistry</i> , Vol. 1, 2.1.1-2.1.17, John Wiley & Sons, (2000)		
E D		Lefebvre et al., <i>J. Med. Chem.</i> , 38, 3941-3950 (1995)		
E E		Martin, <i>Helv. Chim. Acta</i> , 78, 486-504 (1995)	X+	
E F		McBride et al., <i>J. Am. Chem. Soc.</i> , 108, 2040-2048 (1986)		
E G		Mizrakh et al., <i>Chem. Abs.</i> , 83, 454, 193184h, (1975)		
E H		Mizrakh et al., <i>Zh. Obs. Khim.</i> , 45 (3), 549-552 (March 1975)	X	
E I		Murphy et al., <i>Tetrahedron</i> , 47 (24), 4077-4088 (1991)		

Examiner Signature

Date Considered

* A concise statement of relevance is being submitted in lieu of a translation. 37 CFR 1.98(a)(3).

+ An English-language equivalent/patent, or an English-language abstract, or an English-language version of the search report or action by a foreign patent office in a counterpart foreign application indicating the degree of relevance found by the foreign office is being submitted in lieu of a concise explanation of relevance under 37 CFR 1.98(a)(3).

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A circular library stamp. At the top, it says "GENERAL LIBRARY CIRCULATION". In the center, it has the date "OCT 12 2004". At the bottom, it says "CIRCULATION". To the left of the date, there is a small square containing a plus sign (+). The entire stamp is printed in black ink on white paper.

Substitute for form 1449A/B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 2

Substitute for form 1449A/B/PTO				<i>Complete if Known</i>	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Application Number	09/937,292
				Filing Date	January 25, 2002
				First Named Inventor	Beaucage
				Group Art Unit	1626
				Examiner Name	T. Solola
Sheet	2	of	2	Attorney Docket Number	

OTHER - NON PATENT LITERATURE DOCUMENTS

Examiner Signature _____ **Date Considered** _____

* A concise statement of relevance is being submitted in lieu of a translation. 37 CFR 1.98(a)(3)

- + An English-language equivalent/patent, or an English-language abstract, or an English-language version of the search report or action by a foreign patent office in a counterpart foreign application indicating the degree of relevance found by the foreign office is being submitted in lieu of a concise explanation of relevance under 37 CFR 1.98(a)(3).